

Table 1 - Gulfco Data Sets Not Meeting Completeness Goals<sup>1</sup>

<u>Medium</u>	<u>Analyte</u>	<u>Percent Complete</u>	<u>Total Number of Samples<sup>2</sup></u>	<u>Number of "R"-Flagged Samples</u>	<u>Basis for "R"-Flag</u>	<u>Possible Explanation for "R"-Flag Basis</u>	<u>Data Usability Implications for Risk Assessment</u>	<u>Data Usability Implications for Nature and Extent Evaluation</u>	<u>Proposed Corrective Action</u>
Surface Water	2-chloroethylvinyl ether (2-CEVE)	0%	17	17	0% recovery in MS/MSD samples	Reactive compound that readily breaks down under acidic conditions such as in acid-preserved aqueous samples <sup>3</sup>	None - analyte not detected in other media; not historically associated with Site	None - analyte not detected in other media; not historically associated with Site	Collect unpreserved VOC aliquot for future water samples
Surface Water	Benzoic Acid	71%	17	5	<10% LCS recovery	Poor (non-reproducible) chromatographic performance <sup>4</sup>	None - analyte not detected in any of the 12 non-"R"-flagged samples in this data set; detected in only two samples of other media; not historically associated with Site	None - analyte not detected in any of the 12 non-"R"-flagged samples in this data set; detected in only two samples of other media; not historically associated with Site	None <sup>7</sup>
Surface Water	Pyridine	59%	17	7	<10% LCS recovery	Subject to poor performance at GC injection port temperatures for method <sup>4</sup>	None - analyte not detected in any of the 10 non-"R"-flagged samples in this data set; only detected in one sample of other media; not historically associated with Site	None - analyte not detected in any of the 10 non-"R"-flagged samples in this data set; only detected in one sample of other media; not historically associated with Site	None <sup>7</sup>
Soil	2-CEVE	25%	100	75	0% recovery in low level MS/MSD samples (medium-level samples passed)	Highly reactive compound subject to hydrolysis catalyzed by acidic sites in clay soils and to biodegradation in soil <sup>3,6</sup>	None - analyte not detected in any of the 25 non-"R"-flagged samples in this data set; not detected in other media; not historically associated with Site	None - analyte not detected in any of the 25 non-"R"-flagged samples in this data set; not detected in other media; not historically associated with Site	None <sup>7</sup>

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Soil	Antimony	56%	214	95	<30% recovery in MS/MSD samples	Naturally-occurring silicates in soils forming insoluble Sb-silicate complexes during digestion with oxidizing acids <sup>5</sup>	Not significant - "R"-flagged samples were all non-detect, while detectable concentrations were reported in non-"R"-flagged samples.	No samples north of Marlin "R"-flagged. Four of 15 samples from east grid column south of Marlin "R"-flagged, all samples from west grid south of Marlin were "R"-flagged.	Re-evaluate MS/MSD data taking Post Digestion Spike results into consideration (see separate QAA memorandum dated March 1, 2007 for results of this re-evaluation); Consider alternate digestion techniques for future samples
Groundwater	Benzidine	67%	27	9	0% recovery in MS/MSD samples	Subject to oxidative losses during solvent concentration and poor chromatographic behavior <sup>4</sup>	None - analyte not detected in any of the 18 non-"R"-flagged samples in this data set; detected in only two samples of other media; not historically associated with Site.	None - analyte not detected in any of the 18 non-"R"-flagged samples in this data set; detected in only two samples of other media; not historically associated with Site.	None <sup>7</sup>
Groundwater	Benzoic Acid	59%	27	11	<10% LCS recovery	Poor (non-reproducible) chromatographic performance <sup>4</sup>	None - analyte not detected in any of the 16 non-"R"-flagged samples in this data set; not detected in other media; not historically associated with Site.	None - analyte not detected in any of the 16 non-"R"-flagged samples in this data set; not detected in other media; not historically associated with Site.	None <sup>7</sup>

## Notes:

1- Completeness Goals as established in QAPP (page 10) are 90% on a sample level and 80% on an analyte level.

2 - Total number of samples includes field duplicate samples.

3 - SW-846 Method 5035A (new method, not yet promulgated), "Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples", July 2002

4 - SW-846 Method 8270C, "Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", December 1996

5 - M.J. Nash, J.E. Maskall, and S.J. Hill, "Methodologies for determination of antimony in terrestrial environmental samples", *J. Environ. Monit.*, 2000, 2, 97-109

6 - TOXNET Hazardous Substances Data Bank (HSDB) <http://toxnet.nlm.nih.gov/>

7 - Since the analysis for this compound is known to be problematic and the incomplete data set is not significantly affecting the Risk Assessment or the Nature and Extent Evaluation, no specific corrective action is specified. However, the laboratory has been notified that the completeness is low for these analytes and will closely monitor performance for future samples and ensure that chromatographic column maintenance (for Benzoic Acid), injection port maintenance (for Pyridine), extract solvent concentration (for Benzidine), etc. are performed properly.